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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,496	09/08/2003	Paul T. Bender	02103-381001 / AABOSS16	9342
26162	7590	03/31/2010	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			SY, MARIANO ONG	
			ART UNIT	PAPER NUMBER
			3657	
			NOTIFICATION DATE	DELIVERY MODE
			03/31/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/657,496	<b>Applicant(s)</b> BENDER, PAUL T.	
	<b>Examiner</b> MARIANO SY	<b>Art Unit</b> 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-9 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                     |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                         | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/15/2010</u> . | 6) <input type="checkbox"/> Other: _____                                                |

### **DETAILED ACTION**

1. The amendment filed on January 15, 2010 has been received.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "also comprising a clamping circuit comprising a rectifier" in lines 1-2. It is indefinite and unclear if it is the same or different from "a fail-safe clamping circuit" recited in claim 1, line 7.

Claim 6 recites the limitation "in which the actuator comprises an armature and a stator" in lines 1-2. It is indefinite and unclear if it is the same or different from "an armature and a stator" as recited in claim 1, line 3.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Patil et al. (US 5,070,284).

Patil et al. disclosed an active vehicle suspension system with fail-safe operation comprising: an actuator 100 with an armature and a stator, the stator having at least one coil with coil ends, power electronics connected to the coil ends to deliver power to the actuator through the coil ends, and a fail-safe clamping circuit 118, 120, 138 connected to the coil ends powered by energy produced from the movement of the actuator that is directly conveyed to the clamping circuit from the coil ends, to passively damp the actuator during a failure of the power electronics by clamping the coil ends together through relay 120; wherein when the machine 104 is operated as an alternator in the fail-safe mode, electric currents are generated by the rotation of the armature via the screw threads 112 and the screw cage 106, and the generation of electric currents will definitely generate a back electromotive force which powers the clamping circuit through the coil assembly.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 3-5, 7-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patil et al. in view of Murty (US 4,815,575).

Re-claims 3 and 4 Patil et al. failed to disclose multiple coils and the clamping circuit electrically connects coil ends together to change the passive damping characteristic of the actuator and failed to disclose the clamping circuit comprises a solid-state device.

Murty teaches, as shown in fig. 2, the use of a multiple-phase coil assembly A,B,C, a MOSFET normally-open solid state switch 30, which is a silicon device, electrically connecting at least one coil end, see col. 3, lines 52-57.

It would have been obvious to one of ordinary skill in the art to merely provide the suspension system of Patil et al. with the known multiple-phase coil assembly which is a MOSFET normally-open solid-state switch and the switch electrically connecting at least one coil end, as taught by Murty, in order to change the passive damping characteristic of the actuator.

Re-claim 5 Patil et al. disclosed the clamping circuit comprising a rectifier 118 and a single unidirectional switch.

Re-claims 7 and 8, Patil et al. failed to disclose the use of a supplemental circuit, which comprises a bipolar Royer oscillator capable of operating at an input voltage of approximately 0.5 volts, for boosting the back EMF.

It would have been obvious to one of ordinary skill in the art to use a supplemental circuit to boost the voltage in order to enable the switch of the clamping circuit. As for the supplemental circuit comprises a bipolar Royer oscillator capable of

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operating at an input voltage of approximately 0.5 volts, it would have been obvious to one of ordinary skill in the art to use a bipolar Royer oscillator as merely a design choice as a selection of specific well known elements to perform a specific function.

Re-claim 9 Patil et al. was silent to disclose wherein the clamping circuit comprises switch circuitry enabled during vehicle startup and shutdown.

It would have been obvious to one of ordinary skill in the art to enabling the clamping circuit during vehicle startup and shutdown in order to ensure the generation of a force during a failure of the suspension device so as to provide safety.

Re-claim 11 Patil et al. failed to disclose wherein the clamping circuit comprises switch circuitry pulsed to change the passive damping characteristic of the actuator.

Murty teaches, as shown in fig. 2, wherein the output of the microcomputer 35 is a pulse modulated switching voltage which is provided to a switch 30 (part of the clamping switch) and thus control resistor 23 and the damping of the suspension, see col. 3, lines 52-57.

It would have been obvious to one of ordinary skill in the art to merely provide the suspension system of Patil et al. with the known use of the output of the microcomputer, a pulse modulated switching voltage, which is provided to a switch (part of the clamping switch) and thus control resistor and the damping of the suspension, as taught by Murty, in order to change the passive damping characteristic of the actuator so as to adjust the damping.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1, 3-9, and 11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIANO SY whose telephone number is (571)272-7126. The examiner can normally be reached on Mon.-Fri. from 8:30 A.M. to 2:30 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi, can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/MS/

March 24, 2010

/Robert A. Siconolfi/  
Supervisory Patent Examiner, Art  
Unit 3657